Declaration –U.S. Patent Application No. 10/803,868

Applicant: Arie Yehuda Polak

I, Itzhak Bar Yona, an Israeli citizen residing at 17b Rabbi Yichye Avitz St., Rosh Haayin, Israel, hereby declare:

I am the general manager of Bar Yona Technologies Ltd. During the last 30 years, I have been dealing with industrial development and the application of novel technologies, in addition to being a fruitful inventor that holds many patents. Most of my inventions are successfully applied in many fields of technology, including military systems, metal products, plastic products, optical elements, lenticular products and others. I am also invited to many conferences in Israel and in other countries, as a wanted lecturer in the field of inventive thinking and implementation of inventions.

My educational background is that I hold a BSc. Degree received 1973 from the **Technion - Israel Institute of Technology,** Haifa, Israel in the field of Architecture and City Planning. My Registration No. is 17890.

For practical experience, since 1974, I was engaged as independent R&D entrepreneur, in military and civil fields. Among the various projects that I handled there can be mentioned the following:

1989- 1994, consulted for Eagle Military Gear Overseas in Ashkelon and worked on

1. Military and civilian bullet proof vest and garments developed and manufactured in composite material technology.
2. Chemical warfare means, such as overpressure hoods, chemical filters, and foldable shelters. (See for example US patent 5,022.900 – Forced ventilation filtration device.)

In 1995 I provided technical support and engineering drawings for the IDF in the field of dry storage systems.

During 1995 -- 1998 I developed, as an independent entrepreneur, the following technologies:

1. Light selective transparent panels, known as Selectogal, produced and manufactured by Polygal Ramat Hashofet.
2. NBC filter compassing unit for civilians, known as Rainbow, manufacture by Beith El Zichron Yaakov industry.
3. Tablet Dispenser US 5,351,858 Log-Plastic products, Ashdot Yaakov.

In 1988 I founded MVT - Multi Vision Technologies Ltd., in the field of advertising using lenticular technology, based on my following patents:

US 6.542,464 – Computerized image processing method.

US 6,226,906 – Display unit.

US 6,618,972 - Automatic vending machine

US 6,463,012 - Timepiece.

US 6,748,684 – Display unit.

2002 – Keyboard with multiple indicia sets – US 6,805,506

2005 – Retro reflective aiming means for firearms – PCT/Il 2005/000485

I have known Mr. Arie Polak, the inventor of US Patent Application Serial No. 10/803,868, since 2001, but only as a friend and colleague. He has asked me to conduct certain tests with respect to his invention, which I have undertaken and report in this declaration. My testing activities and report herein are based on my understanding from reading the specification of the above noted US Patent Application, what is claimed as an invention, the prior art cited of record in the prosecution of the application, and a current file wrapper of the prosecution history of the above noted US Patent Application.

I was asked by Mr. Arie Polak, the inventor and applicant to test different configurations of devices for controlling the air conditions at a target at a given location, as illustrated in the drawings and described in the specification of the above U.S. Patent Application with respect to air flow patterns generated by several devices and the humidity achieved as a function of distance. The goal of the tests was to measure air flow and humidity achieved by various devices, including a device according to US Pat. No. 6578828 to Terrel; a device according to US Pat. No.

6086053 to Natschke et al; and a device according to the claimed invention in the noted US Patent Application. The tests have been conducted at Petach Tiqua, Israel on February 18, 2009.

1. Airflow test

The goal of this test was to measure the effect of adding an air intake implemented by a fan housing 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application to a given fan unit vs. the same fan unit with no air intake, but only exposed to the ambient air, such as shown in the Terrel and Naschke et al patents.

A standard Ziehl-Abegg (Künzelsau, Germany) FCO63DQ fan having an 0.7 KW electric motor was used, while rotating at a speed of 900 rpm. The fan was positioned in a closed cellar. A vectored grid for defining airflow patterns was drawn on the floor, as illustrated in Fig. 1 in Exhibit A, attached. The object of the test was to measure air flow and humidity mist, created by the given fan with and without an air intake housing (flange).

In the first test, a Ziehl-Abegg fan, without an air intake implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application, such as, the fan shown in Fig. 4 of Exhibit A, created an air stream at a direction corresponding to the center line of the grid, and air flow velocities at 3.5 meters and 6 meters distant from the fan (flange) were measured to be 3.0 m/s and 2.0 m/s, respectively, as shown graphically by dotted line curves on the air flow chart, Exhibit B, attached.

In the second test, an air intake implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application was added to the basic fan, see Fig. 3 of Exhibit A, and the same rates of air flow were measured and determined to be at distances from the fan of 10 meters and 14 meters respectively for air flow velocities of 3.0 m/s and 2.0 m/s, respectively, as shown graphically by solid line curves on the air flow chart, Exhibit B, attached.

The unexpected effect resulting by adding the air intake implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application can be seen very clearly. While airflow velocity of 2.0 m/sec was measured at a distance of 6.0 meters in the first test, the same airflow velocity was measured at a distance of 14 meters in the second test when the air intake (flange) was added to the same fan. Likewise, airflow of 3.0 m/sec was achieved at a distance of 3.5 meters in the first test, whereas the same airflow velocity was measured at a distance of 10 meters in the second test when the air intake (flange) was added to the same fan..

2. Humidity Test

The goal of this test was to measure the humidity of a mist stream, created by 4 misters, located at the periphery of the fan (as shown in Fig. 5, Exhibit A) and then, the same misters located at the center of the fan (as shown in Fig. 6, Exhibit A) with and without an air intake implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application (air intake configuration). Water was injected into the misters at a pressure of 5.0 atmospheres. Thus there were four test setups.

The initial humidity rate at the cellar was measured to be 54% and maximum relative humidity rate, at the end of each test, was measured after 5.0 minutes of exposure to the mist, at distances from the fan of 10 and 15 meters. The test results are recorded on the Relative Humidity chart, Exhibit C, attached.

In the first test setup the 4 misters were located on the periphery of the fan (as appear in the Terrel Patent) without an air intake configuration (flange). The test resulted in measured relative humidity rates reaching 70% and 58% (illustrated by solid bold line curves in the chart, Exhibit C) measured at distances of 10 and 15 meters, respectively.

In the second test setup the 4 misters were located near the center of the same fan (as appear in the Naschke et al Patent), but without an air intake configuration (flange). The test resulted in measured relative humidity rates reaching 82% and 70%

(illustrated by bold dashed line curves in the chart, Exhibit C), measured at distances of 10 and 15 meters, respectively

In the third test setup the 4 misters were located on the periphery of the fan (as appear in the Terrel Patent), but this time, an air intake configuration (flange) was implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application. The test resulted in measured relative humidity rates reaching 94% and 84% (illustrated by unbolded solid line curves in the chart, Exhibit C), measured at distances of 10 and 15 meters, respectively.

In the fourth test setup the 4 misters were located at the center of the fan with an air intake configuration (flange) implemented by a fan housing (flange) 8 as shown in Figure 1 and described in paragraph [0073] of the specification of the above US Patent Application. The test resulted in measured relative humidity rates reaching 99% and 92% (illustrated by unbolded dashed line curves in the chart, Exhibit C), measured at distances of 10 and 15 meters, respectively.

The Relative Humidity chart, Exhibit C shows that the fourth test setup of locating a set of misters near the center of the same fan with an air intake mounted around the fan (as appears in Fig. 1 and described in paragraph [0073] of the specification of US Patent Application Serial No. 10/803,868), and claimed in the subject patent application achieved unexpected performance. Quite unexpectedly the claimed invention attained relative humidity rates reaching 99% and 92% (illustrated by unbolded dashed line curves in the chart, Exhibit C) measured at distances of 10 and 15 meters,

Summary

Whereas all four configurations tested resulted in increased humidity, the claimed method achieved superior and unexpected results for a concentrated mist stream with an air flow of 2 m/sec and a relative humidity of 92% at 16 meters distant from the fan by using a set of misters located near the center of the same fan with an air intake (flange) mounted around the fan as shown in Fig. 1 and described in paragraph [0073] of the specification of US Patent Application Serial No. 10/803,868.

Conclusions

After considering the invention described in the said patent application as noted above, and the invention expressed in new claim 158 (set forth below) to be submitted, with this declaration, in the above U.S. patent application, the cited prior art references (which according to the Examiner, render the pending claims in the above U.S. patent application obvious) and in the light of the tests conducted, in my opinion the invention as set forth in the method claimed in new claim 158 and dependent claims thereto, is fully supported and taught by the specification and drawings of the above U.S. Patent application, and is novel, unique, useful, unobvious and inventive over the cited and applied prior art. Further, the method of new claim 158, in my opinion, would be completely unobvious and unexpected from the teaching of the cited and applied prior art.

158. (new) Method for controlling the temperature of a target animal at a given location about 16 meters distant comprising the steps of:

a. providing an air fan assembly comprised of a housing including an air inlet and a planar member defining an air outlet opening and an air fan juxtaposed in said air outlet opening in said planar member with the planar member peripherally surrounding said fan on all sides and extending peripherally outwardly thereof, said air fan having blades rotary mounted on a hub that has a longitudinal axis about which said blades rotate and a motor driving said fan;

b. mounting said air fan assembly on a support for pivoting about an axis normal to the longitudinal axis of said hub;

c. operating said air fan assembly to generate, downstream from the air fan, an air stream having a maximum velocity of 2 m/sec;

d. providing a cylindrical nozzle chamber fixed to the air outlet side of the fan longitudinally aligned with the hub and of substantially the same diameter and having a front portion facing forward in the direction the air stream flow, said chamber defining at least one forward facing opening;

e. introducing liquid via a liquid inlet to the cylindrical nozzle chamber with an orientation that produces centrifugal motion for liquid within the cylindrical nozzle chamber, said liquid being introduced under a pressure of from about 3 to 6 atm and at a flow rate of from about 5 l/hr to about 50 l/hr;

f. press fitting at least one replaceable flexible hollow elongated nozzle into said forward facing opening; and

g. discharging the centrifugally moving liquid in said cylindrical nozzle chamber through said at least one flexible hollow elongated nozzle to form a conic spray centrally entrained in said

air stream for controlling the temperature of a target animal at a given location about 16 meters distant from said at least one flexible hollow elongated nozzle.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

Itzhak Bar Yona, BSc.

Signature: Itzhak Bar Yona

בר-יונה
יזמות טכנולוגית בע"מ
ח.פ. 51-2958257

Date: 09.03.09

(March 9th 2009)

EXHIBIT A

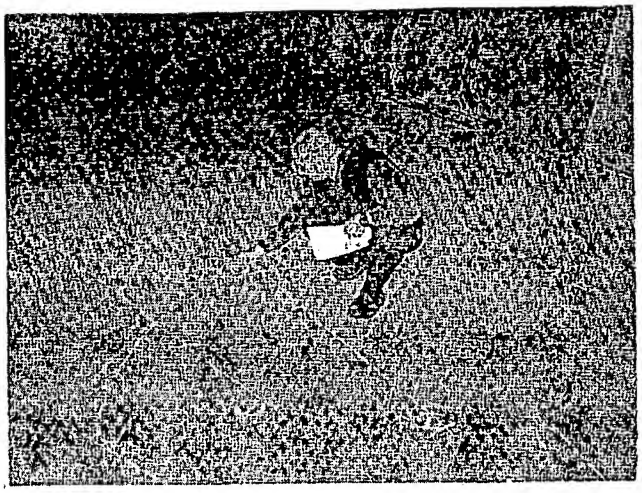


FIG.1

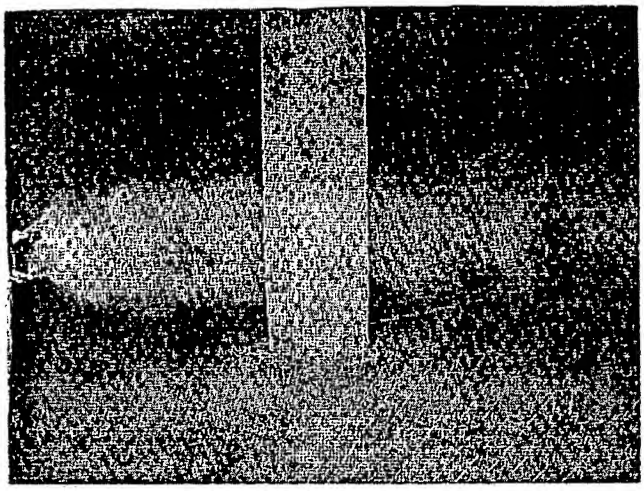


FIG.2

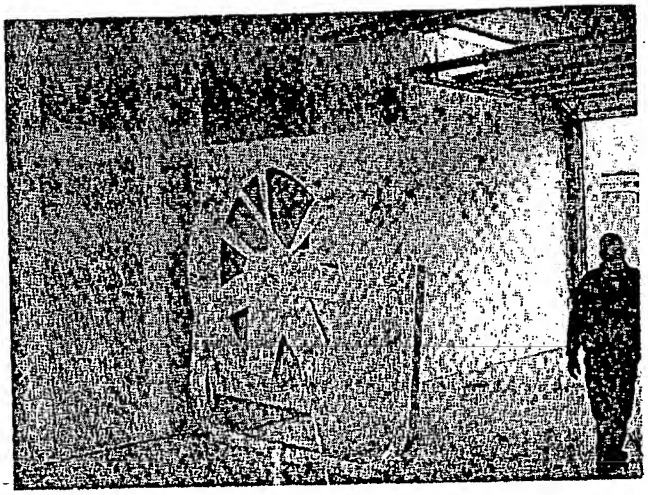


FIG.3

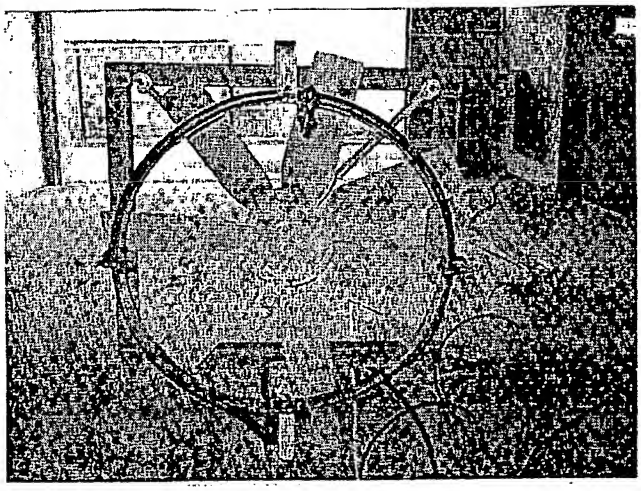


FIG.4

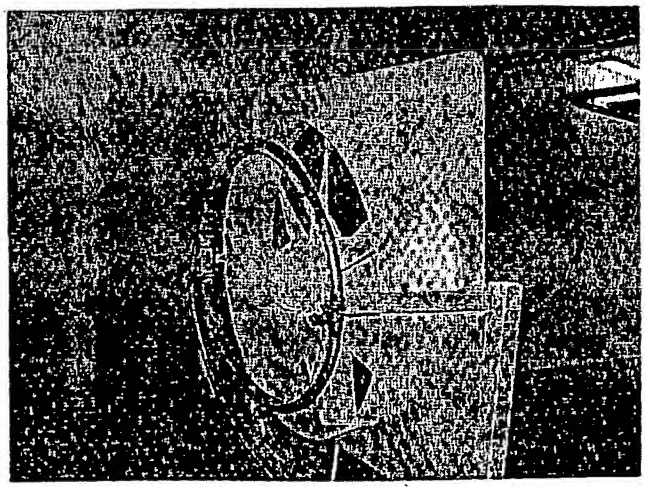


FIG. 5

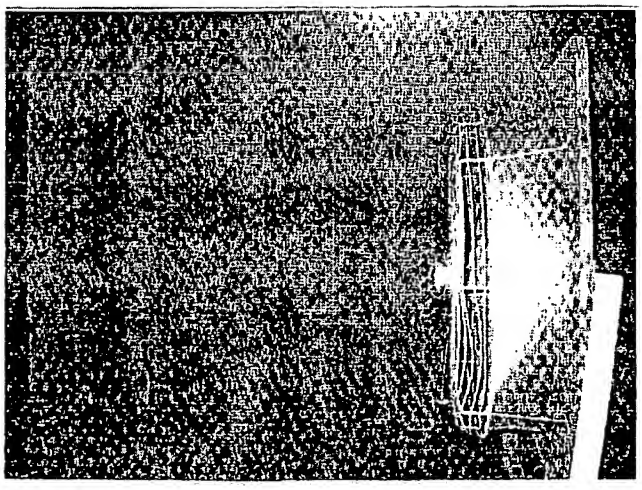
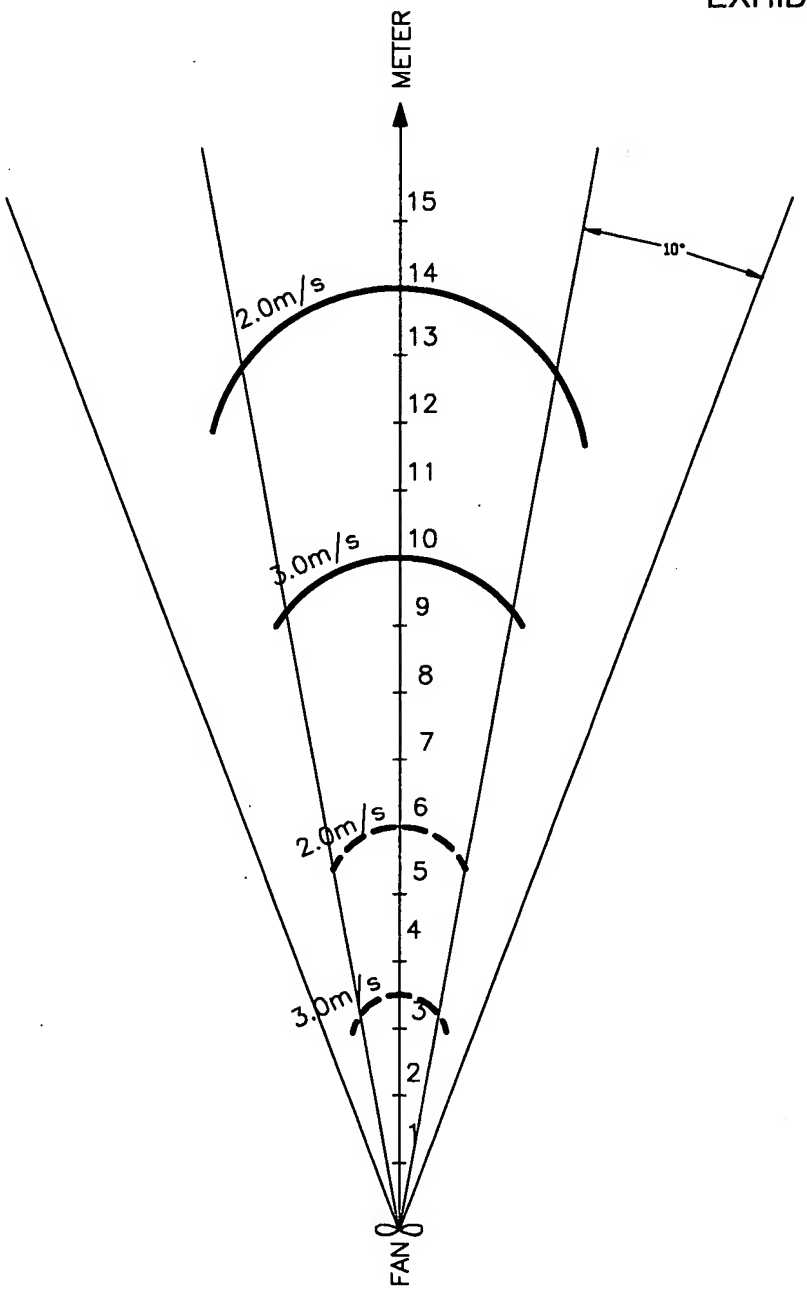


FIG. 6

AIR FLOW TEST AT 2.0 m/s AND 3.0 m/s

EXHIBIT B



FAN WITHOUT FLANGE - - - -

FAN WITH FLANGE ——————

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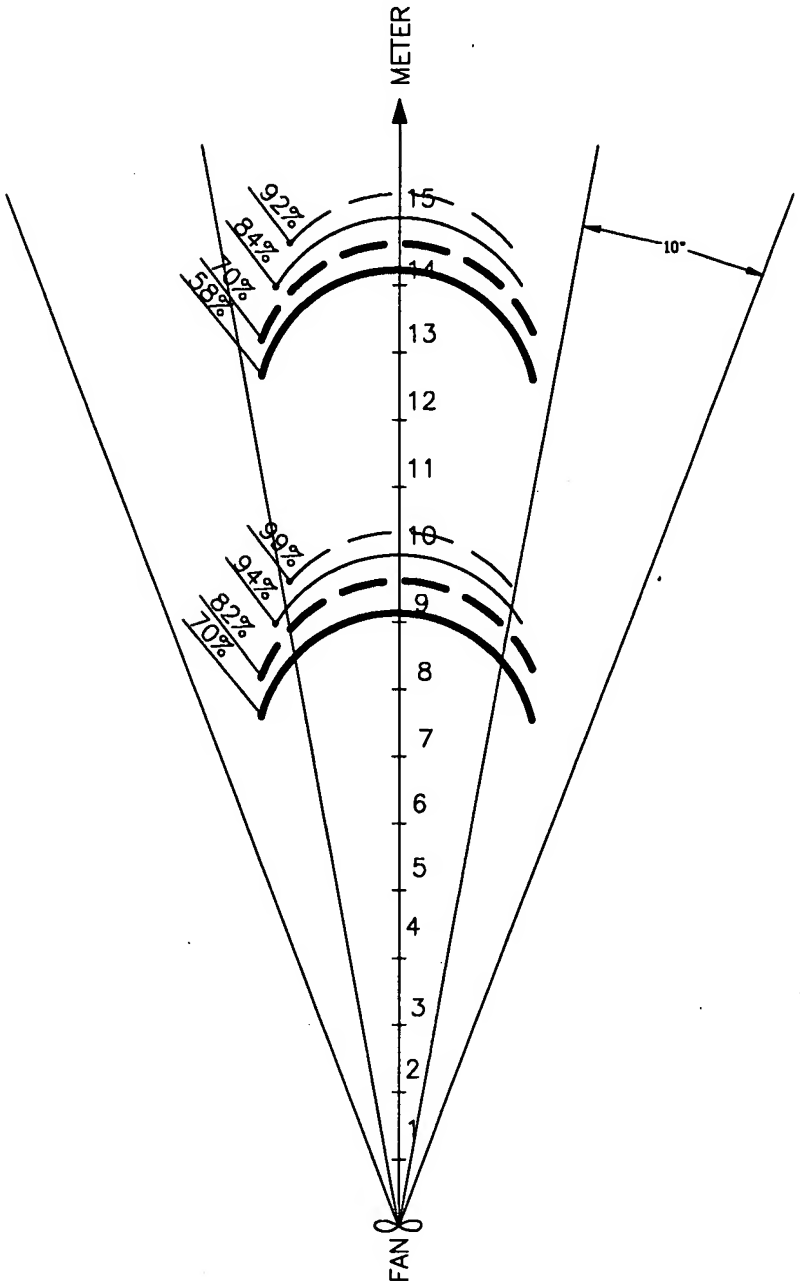
RELATIVE HUMIDITY TEST

EXHIBIT C



Fan without flange, misters at the periphery

Fan without flange, misters at center

Fan with flange, misters at periphery

Fan with flange, misters at center

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